**Designing and Implementing SQL Server Tables and Views**

a. Before you create a table, you need to know the database that will hold the table.

b. You need to know the name of schema (default: dbo

c. Naming Conventions

Creating the database

1. Define the database by the term USE [database name], using Bob Shoes as an example

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1. Show the entry for the database in the system tables by using the SELECT \* From sys.database WHERE name = [database name]

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1. Show the layout of the files for the database using EXEC sp\_helpfile;

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1. Create the Schema for the database, optional to default dbo

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5. Create the new filegroups for data and logs

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The create the table

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Adding primary key to your created table

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**Normalization**

To understand this better, we add values to our created table

The word (DRY – Don’t Repeat Yourself) should guide you in normalization. It reduces redundancy and improve data integrity.

2Nd Normal form

You will have the primary and the foreign key

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Foreign keys are used for referential integrity

3rd Normal Forms like separating address and salutation from the customer table.

**Ensuring Data Integrity with Constraints**

**NULL VALUES**

To avoid some null values, its right to add default values to come columns like date:

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You can add the default when creating the table

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**PRIMARY KEYS**

Unique constraints make sure there are no duplicate values.

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**Foreign Keys**

Foreign keys build and enforce a link between two tables

The link is controlled by referencing table having a foreign key to a base table

It preserves referential integrity. Its important to add ON DELETE CASCADE when creating a table. This will get any item deleted, example when a particular is no longer in service.

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**Check Constraint**

This constraint helps to validate a row, making sure it not empty.

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When you insert a null value to a value to a check constraint value field it will return an error

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Using Check constrain in the in clause

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**Designing View to Meet Business Requirements**

1. Motivation for Views. It encapsulates a query, customize result, security, backward compatibility. Views are virtual tables.

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Views happen when two or more tables are joined to get a required business requirement. As best practice, its always right to alias the columns (information hiding (David Parnas)):

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In creating a view, you can add Schema binding, which prevents tables to be dropped without removing the view first. You must reference the schema(dbo)

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**Implementing Indexed Views**

An index view is a persistent object stored in the database in the same way that table indexes are stored. Implementing this optional.

**Implementing Partitioned Views**

This happens when you have multiple tables to query, you select all tables with the UNION ALL. It has no limitation. Reference <https://www.sqlshack.com/sql-server-partitioned-views/>

All columns in each table must match. If you want to have partition view, then you have to design your table with partition view in mind.